Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
Service	)	

COMMENTS OF THE EIA/ATV COMMITTEE

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July 16, 1992

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SUMMARY OF COMMENTS

The EIA/ATV Committee, comprising a broad spectrum of electronics enterprises with strong, but diverse, interests in the implementation of advanced television ("ATV") in the United States, supports the Commission's continuing efforts to formulate public policies for ATV. Highlights of these comments include the following points:

- We support the Commission's decision to limit initial eligibility for ATV channels to existing broadcasters.
- We agree that "definite application and construction deadlines" are essential to the goal of bringing ATV to the American public quickly, and we support the two- and three-year deadlines adopted by the Commission.
- We support the Commission's actions with respect to the full range of spectrum issues, including broadcast auxiliary services, coordination with Canada and Mexico, and the treatment of low-power television and translator services.
- We agree with the Commission's determination that NTSC should be discontinued, nationwide, on a single date. Although we believe that it is premature to establish a firm date at this time, if the Commission nonetheless decides to do so it should reiterate its firm commitment to a thorough review of this matter in 1998, when more information is available.
- Predictions about the availability and costs of ATV receivers, downconverters, and broadcast equipment are necessarily speculative, but "guesstimates" are possible. First-generation ATV receivers will likely command a 100-300 percent premium over comparable NTSC receivers, but this will decline over time.
- Concerning simulcasting, we believe the Commission should recognize the importance, especially in the early years of the transition, of allowing broadcasters to exercise their creativity in ways which stimulate consumer interest in ATV and help to develop the market for ATV receivers. On a related point, we suggest that the Commission consider establishing minimum requirements for the proportion of programming on ATV

channels that is of true HDTV quality (as opposed to upconverted NTSC).

- We believe it is extremely important that the Commission conduct a thorough review of transition issues in 1998. This approach will allow for such "mid-course corrections" as may be advisable in light of the much greater information that will be available at that time.

- We believe the Commission must remain vigilant to ensure that patent licensing does not become an obstacle to the manufacture of ATV equipment. Full documentation of the system and placement of the standard into the public domain are also essential to permit full competition in the manufacture of ATV equipment.

- We support the efforts of the Commission and the Advisory Committee concerning "compatibility," to ensure the suitability of the terrestrial ATV broadcast standard for use in other video delivery media, such as cable, telecommunications, and satellite, and with computer applications. In the development of consumer acceptance of ATV, it will be especially important that ATV be compatible with, and carried by, cable.

- Encryption, captioning, and extensibility issues all warrant continued attention by the Advisory Committee and the Commission.

- We are aware of no additional technologies which have reached the point of development and promise that they merit alteration of the Advisory Committee's existing test plans. But the door should not be closed on refinement or combination of superior features of the systems which are currently under consideration.

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COMMENTS OF THE EIA/ATV COMMITTEE

The EIA/ATV Committee hereby submits its comments on the Second Report and Order/Further Notice of Proposed Rulemaking ("Further Notice") released by the Commission on May 8, 1992.[1] We welcome the opportunity to renew our participation in the Commission's ongoing effort to formulate public policies for advanced television ("ATV").

I. INTRODUCTION AND INTEREST OF EIA/ATV COMMITTEE

The EIA/ATV Committee is an organization sponsored by the Electronic Industries Association ("EIA"). It seeks to promote dialogue and consensus among manufacturers of a wide variety of electronics equipment, as well as providers of video delivery services. As reflected in the attached Statement of Principles, the Committee strongly supports the efforts of the Commission, the Advisory Committee on Advanced Television, and the Advanced Television Test Center

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1/ 7 FCC Rcd 3340 (1992) ("Further Notice").

with respect to testing of ATV systems, selection of a system for terrestrial broadcasting, and related matters.

The EIA/ATV Committee comprises diverse organizations, including developers, manufacturers, sellers, and installers of equipment used in broadcast, cable, satellite, telecommunications, and consumer electronics. Individual members of the Committee inevitably hold their own distinct views on the issues pending before the Commission. The Committee is limited to articulation of positions on which there is general agreement.

The Commission's own efforts reflect a strong appreciation of the importance of consensus. The Commission's use of notices of inquiry, tentative decisions, and notices of proposed rulemaking, coupled with a high-quality Advisory Committee process, has helped to ensure that relevant issues are identified and resolved in an orderly, logical, and expeditious sequence. The Further Notice represents another substantial stride toward the goal of prompt, widespread, and successful implementation of ATV.

II. DISCUSSION

The following comments address many, but by no means all, of the issues presented in the Further Notice. These comments follow the organizational structure of the Further Notice. For the most part, our comments are addressed to issues concerning which the Commission is

seeking public comment. In a few instances, however, we present views, for the record, regarding matters as to which the Commission has already reached a final decision.[2]

A. Eligibility, Allotment, and Assignment Issues

The EIA/ATV Committee strongly supports the Commission's determination that initial eligibility for ATV channels must be limited to existing broadcasters. A variety of factors support this public interest determination. It will preserve competition in the local video services market; it properly recognizes ATV as a major advance in television technology, but not as the start of a completely new service; and it will promote the most "rapid penetration of ATV receivers and, hence . . . , contribute to higher sales volumes and eventually lower costs for these receivers."[3]

We also strongly endorse the Commission's finding that "definite application and construction deadlines" are essential to the goal of bringing ATV to the American public quickly.[4] The Commission has adequately explained its reasons for believing that two years is a sufficient time

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2/ These comments are being filed on a date when they are timely for consideration as responses to the several pending petitions for reconsideration of the Second Report and Order, not just as comments on the Further Notice. See 57 Fed. Reg. 29,320 (1992).

3/ Further Notice at ¶ 4; see Further Notice at ¶ 5.

4/ Further Notice at ¶ 21.

for applications and for allowing licensees three years to construct their ATV transmission capabilities (but not necessarily to complete full studio conversion to ATV).[5] Special situations requiring additional time can, of course, be accommodated upon an appropriate showing of special circumstances,[6] but the establishment of a general rule is necessary to promote expeditious progress toward the widespread availability of terrestrial ATV broadcasting, without which the transition simply cannot proceed.

Broadcasters must not tarry in taking advantage of the opportunities they have so assiduously sought to deliver ATV service to American consumers. It is our firm conviction that the single factor most critical to consumer acceptance of ATV and to a market for ATV receivers is the availability of significant quantities of high-quality ATV programming. Consumers will not purchase receivers until there is sufficient ATV programming to stimulate demand.[7]

5/ Further Notice at ¶¶ 22-23.

6/ Further Notice at ¶¶ 26-28.

7/ Experience with the introduction of color television is instructive. Color broadcast hours were quite limited throughout the first nine years of service. The limited color delivery resulted in very low color TV receiver sales and home saturation build-up during this extended period. Then the number of hours per year of color programming more than quadrupled over a four-year period (from less than 3000 in 1964 to over 12,000 in 1968), and the number of homes with color TV receivers promptly soared (from 2 million to 15 million). Similarly, consumer demand for ATV receivers is likely to mature only after broadcasters provide the necessary incentive, by transmitting large quantities of ATV programming.

The first necessary step is for ATV broadcasting to begin as soon, and on as many separate broadcast stations, as possible. The two-year and three-year deadlines will serve this objective.

Needless to say, a successful transition will require initiative, hard work, and investments by all parts of the industry, including programmers, broadcasters, cable companies, receiver manufacturers, and others. The participation and cooperation of each group will be essential to the overall success of the undertaking. Nevertheless, the Commission has the greatest authority -- and the greatest responsibility -- in the case of terrestrial broadcasters, and the two- and three-year deadlines appear to be both necessary and appropriate elements of the plan for a successful transition.

B. Spectrum Issues

We support the Commission's actions with respect to the full range of spectrum issues, including broadcast auxiliary services, coordination with Canada and Mexico, and the like.[8] We particularly want to endorse the Commission's decision with respect to the treatment of low-power television ("LPTV") and translator services.[9] No one has advocated that these services suffer gratuitous injury, but

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8/ Further Notice at ¶¶ 36-49.

9/ See Further Notice at ¶¶ 39-45.

these services are -- and should remain -- secondary to full-service stations.

It will apparently be necessary to displace some LPTV and translator operations to accommodate advanced television in major markets. The Commission is correct that these must yield to the extent necessary to allow for full-power ATV stations. This is the approach that best serves the public interest.

C. Conversion to ATV

1. Timetable for Conversion

As already stated, we believe that ATV should be established as quickly as possible. In support of this objective, it is important that broadcasters be given strong imperatives to move promptly to begin ATV broadcasting, and it is equally important that the transition be brought to a close as soon as is feasible.

Although the end of the transition may in some sense be as important as the beginning, plans for the termination of NTSC are surely less urgent than plans for the initiation of ATV. There is simply too much that is unknown, and unknowable, to make definitive plans at this time for most issues relating to the conclusion of the transition.

We agree with the Commission's determination that NTSC should be discontinued, nationwide, on a single date.[10] Regional or market-by-market approaches are simply not feasible from the perspective of programmers, networks, receiver manufacturers, retailers, and consumers.

Although we support the notion of a nationwide termination date, we believe that it is premature to establish a firm date at this time. The proposed 15-year conversion period may be too long or too short. Information and insights available today are grossly inadequate to verify the practicality of any date certain for the termination of NTSC.

If the Commission does adopt a tentative date now for the termination of NTSC, that approach could well cause significant disruption of the near-term NTSC TV receiver market. But if a termination date is adopted, the Commission should expressly acknowledge the paucity of information relating to this determination, and it should reiterate its firm commitment to a thorough review of this matter in 1998. At that time, the Commission will have substantially more information upon which to base a determination.[11]

10/ Further Notice at ¶ 52.

11/ "[B]y 1998, we should have gained considerable experience concerning the transition to ATV: we will have selected an ATV system and established an ATV standard; ATV receivers should be available; and numerous broadcast stations should be transmitting in ATV." Further Notice at ¶ 55.

2. Availability and Cost of Equipment

The Further Notice specifically requests information about the likely availability and cost of ATV receivers, down-converters, and broadcast equipment.[12] Members of the EIA/ATV Committee have considered this subject and can offer consensus predictions. These, however, are only "guesstimates" because of the large number of variables and uncertainties that now surround such predictions.

The intense competition which characterizes the consumer electronics industry will ensure that ATV receivers are available as quickly as is humanly possible, within the constraints of complex engineering challenges. At present, industry participants expect that ATV receivers will reach market within two to three years after a standard is approved and documented. Initially, these receivers are likely to be priced on the order of 100 to 300 percent over NTSC receivers of equivalent screen sizes. That premium will decline as ATV matures. By the 15th year, the price premium could range from 20 to 50 percent over equivalent screen sizes of NTSC receivers.

As for ATV-to-NTSC downconverters, predictions are necessarily even more speculative. In the early phases of the transition, of course, there will be little interest in

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12/ Further Notice at ¶ 54; see also Further Notice at ¶ 66.

downconverters, particularly if the Commission adopts its proposed requirement of 100 percent simulcast (discussed below). Early downconverters may cost $500 to $1500 or more, which will make them of very limited appeal to consumers.

After 15 years, the price of downconverters may decline to the $100-300 range. Even if this estimate proves to be correct, past experience with consumer behavior suggests that consumers will not be enthusiastic about purchasing, installing, and using downconverters. Many consumers do not like cable converter boxes, even when there is no apparent cost and when they are installed and maintained by the cable company. Consumer resistance was even greater with respect to converters offered when FM stereo and TV stereo were introduced. We expect similar resistance to ATV-to-NTSC converters.

ATV broadcast transmitters will require less time to develop and command a much smaller price premium than will ATV television receivers. We anticipate that ATV broadcast transmitters will be available approximately one year after approval of an ATV broadcast system. We also expect that these transmitters will cost approximately 10 percent more than comparable existing equipment.

The Notice also inquires about the costs of studio conversions for broadcasters. In this regard, the best available information appears to be that available in

studies performed by the Public Broadcasting Service and by CBS.[13] The estimates contained in those studies are being further refined through the efforts of the Advisory Committee's SS/WP3 (Systems Subcommittee, Working Party 3). The Commission will presumably monitor the further development of implementation cost estimates through that body, which appears to have the requisite expertise to provide the best available information to the Commission.

D. Simulcasting

We believe that the Commission should exercise caution in developing requirements for simulcasting of ATV and NTSC programming.[14] At least in the early years of the transition, what is most important is that broadcasters exercise their creativity to develop the kinds of programming for the ATV channels that stimulates consumer interest and fosters development of a market for ATV receivers. We suggest that the Commission defer any final decisions on this subject until 1998, at which time the state of the transition and the need for a simulcasting requirement can better be assessed.

There is a different and perhaps more important question that is not discussed in the Further Notice: the

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13/ See PBS Engineering: Preliminary HDTV Estimates (Oct. 1990); High Definition Television: Transition Scenarios for TV Stations: A CBS Work-in-Progress (Oct. 23, 1990).

14/ See Further Notice at ¶¶ 58-66.

picture quality of the programs which are broadcast on ATV channels. At this time, we believe the goal of an expeditious transition can best be achieved by specifying a percentage of the programming hours on the ATV channels that must be of true high-definition quality, not just NTSC or upconverted NTSC quality. For purposes of discussion, we suggest something along the following lines:

Years	Percentage of True HDTV Programming
0-2	30
2-4	60
4-5	70
8-15	80

This schedule alone may not be sufficient to attract early consumer interest and rapid build-up of home receivers, but it may be an appropriate baseline requirement for broadcast licensees. We both hope and expect that the programming segment of the industry will move considerably faster.

E. Patent Licensing

The EIA/ATV Committee believes that ATV will succeed only if applicable patents are licensed openly and reasonably. The procedures established by the Advisory Committee establish a measure of protection, but this subject will warrant diligent oversight by the Commission. As we noted in reply comments filed in this docket earlier

this year, potential problems may arise with respect to patents held by parties other than system proponents.

Independent of patents, it is extremely important that the documentation of the standard be complete and placed in the public domain so that manufacturers will be able to proceed expeditiously with the design, manufacture, and sale of broadcast, cable, satellite, consumer electronics, and other ATV products. Incomplete documentation or limitations on the availability or use of that documentation would probably lead to major delays in the implementation of ATV.

A filing by the Advanced Television Standards Committee ("ATSC") on "Coordination of ATV Standards Activities" provides a good structural framework for the ATV standards documentation process. The EIA/ATV Committee encourages the FCC to endorse the ATSC plan and initiate the documentation process as soon as an ATV standard is chosen.

F. Other Issues

1. Compatibility

The Commission has wisely continued to focus on the question of "compatibility," meaning the suitability of the terrestrial ATV broadcast standard for use in other video delivery media, such as cable, telecommunications, and satellite, and with computer applications.[15] This issue

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15/ Further Notice at ¶¶ 70-73.

warrants close scrutiny by the Commission and strong efforts by all participants in the ATV development process.

The success of ATV will require substantial participation by the cable industry. A majority of American homes now receive their television over cable, and any delay by the cable industry in extensive ATV implementation will inevitably retard acceptance of ATV by the American public. Given the large and growing importance of cable in the delivery of programming to consumers, the Commission may need to give more thought to ensuring that cable is a full participant in the advent of ATV. Accordingly, we urge the Commission to explore means of assuring extensive cable carriage of ATV programming from the outset of the transition and to make this a review item in 1998.

A successful transition will also require attention to other delivery media. Satellites already play an important role in the delivery of video programming to certain areas, primarily rural areas not served by cable, and direct broadcast satellite services may increase the importance of satellites as a delivery medium. Telecommunications companies may also become more involved in the distribution of video programs. Compatibility needs of these media should be a factor in the Commission's selection of an ATV system.

We also favor compatibility with computer applications and other products and services, such as

multimedia, to the greatest extent feasible. In this regard, the headers and descriptors within the ATV system should allow the mix of video, audio, and auxiliary data to be varied dynamically so as to enable programmers to provide, and consumers to select from, a range of innovative program and service options. On the other hand, it is also important that the pursuit of compatibility for these purposes not delay ATV system development or selection or retard ATV deployment by any delivery medium. Nor should the pursuit of compatibility or interoperability be permitted to impose significant cost penalties in terms of production, transmission, or reception equipment.

2. Alternative Media

The preceding section already discusses the importance of cable, satellite, and other delivery media in promoting consumer acceptance of ATV. We are heartened that the Commission has agreed with our prior observation that, "as a practical matter, any ATV system selected must support ATV carriage over cable systems."[16] One additional point that warrants discussion relates to encryption.

16/ Further Notice at ¶ 74. In this regard, EIA is helping to address compatibility issues through its ATV Receiver Interface Subcommittee (R-4.1), where representatives of cable, telephone, satellite, and consumer electronics companies are cooperating in the development of standard interfaces to facilitate interconnection and interoperation between TV receivers and various program delivery media (such as cable, satellite, VCRs, laser discs, etc.).

Terrestrial broadcast television is unique in its reliance exclusively on advertisers to generate its revenues. There is no charge to consumers for the service, and there is no incentive whatsoever to restrict consumers' access to the service. In contrast, cable, satellites, and certain other existing and planned delivery media are all heavily dependent upon subscription revenues. They therefore require security measures which protect the service providers' revenue streams. Encryption is therefore needed, preferably with some form of renewable security principle.

The Commission has asked the Advisory Committee to study the encryption capabilities of the proponent systems and to furnish a report on that subject.[17] This seems to be a prudent course of action to ensure that encryption issues receive the careful attention they deserve.

3. Closed Captioning

The Commission is quite right in observing that the Congress, through the Television Decoder Circuitry Act and its associated legislative history, has expressed its intention that closed captioning services be supported during the transition from NTSC to ATV and beyond.[18] The Advisory Committee has now been charged with the

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17/ Further Notice at ¶ 75.

18/ Further Notice at ¶ 78.

responsibility to take closed captioning into account in recommending a standard. We foresee no reason why any of the system proponents would neglect their responsibilities in this important area.

4. Audio Advances

The Commission has wisely directed the Advisory Committee to consider extensibility issues that may arise, most immediately with respect to the audio component of the ATV system.[19] The EIA/ATV Committee agrees with the Advanced Television Systems Committee that improved audio characteristics are a fundamental objective of any ATV system, given that consumers' expectations have risen so dramatically in this regard. Specifically, we believe that ATV systems should be required to be dynamically adaptable, up to at least five separate audio channels. Proper application of the principle of extensibility will ensure that consumers who wish to enjoy the audio equivalent of the theatrical experience can do so, while consumers who are willing to settle for something less are also accommodated. Similarly, dynamically adaptable capability with respect to data will also prove very valuable.

19/ Further Notice at ¶ 79.

5. New Developments

The Commission has requested comment on the Advisory Committee's determination that the five ATV systems currently under evaluation represent the state of available technology and that no new technologies are sufficiently developed to warrant consideration.[20] We agree with the Advisory Committee on this point. We are aware of no additional technologies which have reached the point of development and promise that they merit alteration of the Advisory Committee's existing test plans. The door should not be closed, however, on refinement or combination of superior features of the systems which are currently under consideration.

III. CONCLUSION

The EIA/ATV Committee commends the Commission for its ongoing efforts to narrow options, build consensus, and move as expeditiously as possible toward the initiation of ATV broadcasting. The Further Notice maintains the progress as ATV planning moves into perhaps its most decisive year.

20/ Further Notice at ¶ 80.

We welcome this opportunity to share our views with the Commission. In this manner, and through its other activities, the EIA/ATV Committee will continue to seek to participate constructively in the deliberative process.

Respectfully submitted,

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EIA STATEMENT OF PRINCIPLES ON ADVANCED TELEVISION FOR THE UNITED STATES

The Electronic Industries Association (EIA) is vitally interested in developing a technologically sound and commercially viable Advanced Television (ATV) policy for the United States. EIA's member companies include the leading suppliers of electronic equipment to the broadcast, cable and satellite industries as well as virtually every major manufacturer of color television products. EIA is playing a major role in the ATV standards process and the implementation of the new systems as it has for more than 65 years in the creation of most existing audio and video standards.

We believe that the successful adoption and implementation of ATV systems in the United States is very much in the interest of the American public and plays an essential role in maintaining U.S. R&D and manufacturing competitiveness in the global economy.

Toward that end, EIA supports the following principles and policies:

1. *EIA endorses the current FCC, Advisory Committee and Advanced Television Test Center process for terrestrial broadcast standard testing, selection and approval.*
2. *EIA believes that ATV standard selection should be based solely on objective analysis of technical merit, economic practicality and consumer benefits.*
3. *EIA believes that the ATV standards selection should take place as soon as practicable in order to provide the American people with this new technology on a timely basis, to create U.S. export opportunities and to encourage U.S. competitiveness.*
4. *EIA supports selection of standards that are "friendly" to alternate delivery media through the use of standardized multiport interfaces where necessary.*
5. *EIA endorses the concept of U.S. Government financial support of generic advanced technology R&D within the United States.*
6. *Recognizing the emerging international consensus, EIA believes that ATV systems should have CD-quality audio and conform to the new widescreen, 16×9 aspect-ratio format.*
7. *EIA encourages domestic research and development on and production of ATV receivers and related equipment with the widest possible range of product models and features thereby extending the benefits of this new technology to the largest consumer market.*
8. *EIA endorses the continuous development of new technologies for advanced television and their adoption by all delivery media and product manufacturers as the technology and economics permit.*
9. *EIA supports legislative and administrative efforts designed to encourage low-cost capital formation, make the R&D tax credit permanent, allow joint R&D and product arrangements (appropriately defined and non-exclusionary). We also seek to gain equal access to foreign markets, eliminate export disincentives and generally create and maintain an hospitable policy environment for U.S. business expansion and economic growth.*